



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application No. 10/030,464

Applicant: Feussner et al.

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Examiner: Yong D. Pak

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**Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

DECLARATION UNDER 37 C.F.R. § 1.132 OF DR. IVO FEUSSNER

1. I, Dr. Ivo Feussner, am the Head of the Department of Plant Biochemistry at Albrecht-von-Haller-Institute for Plant Sciences, and a co-inventor on the subject patent application.

2. Sloane et al., *Nature*, 354: 149-152 (1991) ("the Sloane reference") demonstrates that, by mutating position 418 of human 15-lipoxygenase, the resulting lipoxygenation-product is shifted from 15-hydroeicosatetraedric acid (HETE) to 12-HETE (see Table 1). Thus, the initial removal of hydrogen must be shifted from C13 to C10 of arachidonic acid.

3. The C13 to C10 shift described indicates a change in human 15-lipoxygenase positional specificity from one of the possible initial hydrogen removal sites to a neighboring hydrogen removal site. The lipoxygenase mutations disclosed in the Sloane reference reportedly result in a deeper intrusion of the substrate into the enzyme, which in turn results in a shift of the positional activity.

4. In contrast, the method of the pending claims results in a shift in the positional specificity of a potato tuber lipoxygenase for arachidonic acid by two

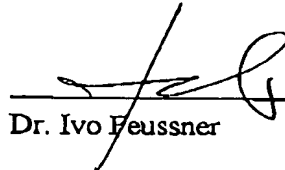
Application No. 10/424,638

Declaration

positions (i.e., C7 to C13). Moreover, the presently claimed method surprisingly leads to a reversion of the substrates in the binding pocket of the enzyme, which is a different mechanism of altering the positional specificity of lipxygenase than disclosed in the Sloane reference. Indeed, only through this mechanism determined by the inventors of the subject application can the shift from C5 to C11 arachidonic acid specificity be achieved.

5. I hereby declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 09-13-2005



Dr. Ivo Feussner